

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of manufacturing a semiconductor device comprising steps of:

irradiating ~~a linear laser beam to a surface of a semiconductor with a line-shaped laser beam in a gas atmosphere containing an impurity while scanning the linear laser beam;~~

applying an electromagnetic energy to the gas atmosphere so as to decompose the gas atmosphere containing the impurity while irradiating the surface with the linear line-shaped laser beam; [[and]]

changing a relative position of the semiconductor with respect to the line-shaped laser beam while irradiating the surface with the line-shaped laser beam; and

heating the semiconductor at a temperature not higher than a crystallization temperature of said semiconductor while applying the electromagnetic energy.

2. (Currently Amended) The method according to claim 1 wherein the gas atmosphere comprises a gas selected from the group consisting of AsH₃, PH₃, BF₃, BCl₃ and B(CH₃)₃ B(CH₃)₃.

3. (Canceled)

4. (Currently Amended) A method of manufacturing a semiconductor device comprising steps of:

providing disposing a substrate in a chamber, said substrate having a semiconductor film comprising silicon formed thereon over a substrate in a chamber;

~~transferring the substrate in a first direction;~~
~~introducing a gas containing an impurity a dopant species into the chamber;~~
~~irradiating the semiconductor film with a laser light through a window having a slit shape while transferring the substrate so that the dopant species changing a relative position of the substrate with respect to the laser light so that the impurity is introduced into the semiconductor film; and~~
~~heating the semiconductor film during a laser light irradiation.~~

5. (Original) The method of claim 4 wherein the semiconductor film is heated not lower than 200 degree C.

6. (Currently Amended) A method of manufacturing a semiconductor device comprising steps of:

disposing a substrate in a chamber, said substrate providing having a semiconductor film comprising silicon formed thereon over a substrate in a chamber;
~~transferring the substrate in a first direction;~~
~~introducing a gas containing an impurity a dopant species into the chamber;~~
~~applying an electromagnetic energy to the gas in the chamber in order to activate the gas; and~~

~~irradiating the semiconductor film with a laser light through a window having a slit shape while transferring the substrate so that the dopant species so that the impurity is introduced into the irradiated portion of the semiconductor film; and~~

changing a relative position of the substrate with respect to the laser light while irradiating the semiconductor film with the laser light.

7. (Currently Amended) The method according to claim 6 further comprising heating the semiconductor film during a laser light irradiation the irradiation of the laser light.

8. (Currently Amended) A method of manufacturing a semiconductor device comprising steps of:

holding a substrate semiconductor in a chamber;
introducing a gas containing dopant species an impurity into the chamber;
producing a plasma of said gas by applying an electromagnetic energy;
introducing said dopant species impurity from said plasma into an entirety of a line-shaped target portion of said substrate semiconductor;
changing a relative position of the substrate line-shaped target portion with respect to said semiconductor in said chamber; and
heating the semiconductor at a temperature not higher than a crystallization temperature of said semiconductor while applying the electromagnetic energy.

9.-10. (Canceled)

11. (Original) The method according to claim 8 wherein said gas is selected from the group consisting of PH₃ and B₂H₆.

12. (Original) The method according to claim 8 wherein said gas is selected from the group consisting of AsH₃, PH₃, BF₃, BCl₃, and B(CH₃)₃.

13. (Currently Amended) A method of manufacturing a semiconductor device comprising steps of:

producing a plasma of a gas by applying an electromagnetic energy, wherein said gas contains dopant species an impurity;
introducing said dopant species impurity from said plasma into an entirety of a line-shaped target portion of a semiconductor film;

changing a relative position of the line-shaped target portion [[over]] with respect to the semiconductor film; and

heating the semiconductor film at a temperature not higher than a crystallization temperature of said semiconductor film while applying the electromagnetic energy.

14.-15. (Canceled)

16. (Original) The method according to claim 13 wherein said gas is selected from the group consisting of PH₃ and B₂H₆.

17. (Original) The method according to claim 13 wherein said gas is selected from the group consisting of AsH₃, PH₃, BF₃, BCl₃, and B(CH₃)₃.

18. (Original) The method according to claim 13 wherein said semiconductor device includes a thin film transistor.

19. (New) The method according to claim 1 wherein said semiconductor device includes a thin film transistor.

20. (New) The method according to claim 4 wherein said semiconductor device includes a thin film transistor.

21. (New) The method according to claim 6 wherein said semiconductor device includes a thin film transistor.

22. (New) The method according to claim 8 wherein said semiconductor device includes a thin film transistor.

23. (New) The method according to claim 1 wherein the semiconductor is moved with respect to the line-shaped laser beam.

24. (New) The method according to claim 4 wherein the substrate is moved with respect to the laser light.

25. (New) The method according to claim 6 wherein the substrate is moved with respect to the laser light.